

**UNITED STATES DISTRICT COURT
DISTRICT OF MASSACHUSETTS**

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UNITED STATES DISTRICT COURT
DISTRICT OF MASSACHUSETTS

MASSACHUSETTS INSTITUTE
OF TECHNOLOGY,

Plaintiff,

v.

HARMAN INTERNATIONAL
INDUSTRIES, INC.,

Defendant.

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CIVIL ACTION
NO. 05-10990-DPW

**REPORT AND RECOMMENDATION
ON CROSS-MOTIONS FOR
SUMMARY JUDGMENT AS TO INVALIDITY**

March 26, 2008

DEIN, U.S.M.J.

I. INTRODUCTION

Plaintiff Massachusetts Institute of Technology (“MIT”) has brought this action alleging that the defendant, Harman International Industries, Incorporated (“Harman”), has infringed U.S. Patent No. 5,177,685, entitled “Automobile Navigation System Using Real Time Spoken Driving Instructions” (the “‘685 patent” or “Back Seat Driver patent”). Presently before the court are the parties’ cross-motions for summary judgment as to the validity of claims 1, 42 and 45 (Docket Nos. 153 and 159), the only asserted claims of the patent-in-suit. By its motion, Harman is seeking a determination that the claims are invalid because field trials of the Back Seat Driver system that took place more than one year before the application for the ‘685 patent was filed constituted “public uses” of the invention prohibited by the public use bar to patentability set forth in 35 U.S.C. § 102(b).

MIT counters that the field trials did not amount to prior public uses under the statute, and it has cross-moved for summary judgment on this issue. In addition, MIT, by its cross-motion, is seeking a judgment that as a matter of law, the availability of an inventor's thesis and his defense of that thesis did not invalidate claims 1, 42 and 45 of the '685 patent under the "printed publication" bar of 35 U.S.C. § 102(b).¹

MIT has unequivocally admitted that claim 1 was reduced to practice by the prototype used in the field trials, and the undisputed facts further establish that the dependent claims 42 and 45 were reduced to practice by that prototype as well. Therefore, as a matter of law, the field trials cannot be considered experimentation, which would preclude a finding of public use. The undisputed facts further establish that MIT took no steps to limit or control the dissemination of information about the invention to participants in the field trials. Harman has established by clear and convincing evidence that most, if not all, of the participants in the field trials were under no express or implied

¹ Both the field trials and the inventor's thesis were at issue in Harman's prior motion for summary judgment, and were addressed by this court in its November 7, 2007 Report and Recommendation on Defendant's Motion for Summary Judgment of Unenforceability Due to MIT's Allegedly Inequitable Conduct (Docket No. 168) ("R&R"). However, this court did not determine at that time whether the field trials constituted a public use of the Back Seat Driver system under 35 U.S.C. § 102(b). As this court noted in its earlier R&R, the record submitted in connection with the instant cross-motions for summary judgment is more comprehensive than the record that was submitted in connection with Harman's prior motion, and a determination of public use was not necessary for the court's decision on Harman's inequitable conduct claim. (R&R at 19). Thus, the question whether the claims of the '685 patent were in public use and are therefore barred from patenting under 35 U.S.C. § 102(b) is addressed for the first time herein. Similarly, in its earlier R&R, this court did not have occasion to evaluate whether MIT should be entitled to summary judgment on the issue of whether the thesis was a "printed publication" that could invalidate the '685 patent. That question is also the subject of the instant Report and Recommendation.

duty to keep the information confidential and that the field trials involved the use of the claimed invention “by a person other than the inventor who [was] under no limitation, restriction or obligation of secrecy to the inventor” more than one year prior to MIT’s application. See Eli Lilly & Co. v. Zenith Godline Pharm., Inc., 471 F.3d 1369, 1380 (Fed. Cir. 2006) (internal citation omitted). Therefore, and for the reasons detailed more fully herein, this court recommends to the District Judge to whom this case is assigned that Harman’s “Motion for Summary Judgment that Claims 1, 42 and 45 of the ‘685 Patent are Invalid under 35 U.S.C. § 102(b) Due to Public Use” (Docket No. 153) be ALLOWED and that MIT’s Cross-Motion (Docket No. 159) be DENIED as to that issue.

With respect to the inventor’s thesis, Harman has failed to present clear and convincing evidence that the thesis was publicly accessible more than one year prior to the patent application. Therefore, this court recommends to the District Judge to whom this case is assigned that MIT’s “Cross-Motion for Partial Summary Judgment that Claims 1, 42 and 45 of the ‘685 Patent are Not Invalid under 35 U.S.C. § 102(b)” (Docket No. 159) be ALLOWED as to that issue.

II. STATEMENT OF FACTS²

Scope of the Record

In connection with the pending motions, each of the parties filed a statement, pursuant to Local Rule 56.1, consisting of over 70 paragraphs of asserted facts. Nearly all of those facts (and “inferences” which may be drawn therefrom) have been disputed, at least in part, or otherwise objected to. Both parties have repeatedly used their responses to the statements of fact as an opportunity to expand upon their legal arguments. These types of responses have made it difficult to ascertain the scope of the factual record. Moreover, many of the so-called “objections” fail to cite to any competent evidence in the record, in violation of L.R. 56.1. The Statement of Facts set forth herein reflects this court’s careful scrutiny of the parties’ factual statements and responses thereto, as well as the underlying record, and this court’s effort to provide a fair description of the relevant material facts that are, and are not, genuinely in dispute.

The Back Seat Driver Project

² The facts are derived from the following materials: (1) “Harman’s Local Rule 56.1 Statement of Undisputed Facts Supporting Summary Judgment that Claims 1, 42 and 45 of the ‘685 Patent are Invalid Under 35 U.S.C. § 102(b) Due to Public Use” (Docket No. 155) (“DF ¶ ___”); (2) Exhibits to “Harman’s Memorandum in Support of Its Motion for Summary Judgment That Claims 1, 42 and 45 of the ‘685 Patent are Invalid Under 35 U.S.C. § 102(b) Due to Public Use” (Docket No. 154) and exhibits attached to Docket No. 154 (“Def. Ex. ___”); (3) “MIT’s Statement of Undisputed Facts” (“PF ¶ ___”), which is set forth beginning on page 1 of Docket No. 160; (4) “MIT’s Response to Harman’s Statement of Undisputed Facts” (“PR ¶ ___”), which is set forth beginning on page 14 of Docket No. 160; (5) Exhibits attached to Docket No. 160 (“Pl. Ex. ___”); (6) “Harman’s Responses to MIT’s Statements” (“DR ¶ ___”), which are set forth beginning on page 2 of Docket No. 165; and (7) “Harman’s Statement of Fact” replying to MIT’s responses to Harman’s initial statement of undisputed facts (“DRep ¶ ___”), which is set forth beginning on page 52 of Docket No. 165.

In the late 1980s, Jim Davis was a graduate student at MIT and was working in the MIT Media Lab under the guidance of his faculty advisor, Chris Schmandt, an MIT research scientist who also served as the Director of the Speech Research Group. (DF ¶ 2; PF ¶ 2). In about 1988, Davis and Schmandt began working on a research project called the Back Seat Driver, which involved automobile navigation using spoken directions. (DF ¶ 3; PR ¶ 3). The project led to Davis' doctoral thesis, which was signed on August 4, 1989, and eventually to the filing, on August 9, 1990, of the patent application that matured into the '685 patent. (See PF ¶ 2; DR ¶ 2; DF ¶ 1). Based upon this filing date, the "critical date" for purposes of the parties' motions for summary judgment is August 9, 1989. (PF ¶ 1; DR ¶ 1). The Back Seat Driver patent issued on January 5, 1993. (Def. Ex. 1 at 1). Davis and Schmandt are named as the inventors and MIT is named as the assignee on the patent. (Id.). In this action, MIT is claiming that Harman has infringed upon claims 1, 42 and 45 of the '685 patent. (See Docket No. 129).

In the 1988-89 time frame, MIT sought sponsorship for its Media Lab by providing general information about its research projects, including the Back Seat Driver project, to various companies. (See DF ¶ 61; PR ¶ 61). The corporate sponsor of the Back Seat Driver research was NEC Home Electronics ("NEC"), which provided at least \$400,000 to fund the project. (PF ¶ 4; DF ¶ 60; PR ¶ 60; Def. Ex. 34; Def. Ex. 35). NEC also became an eventual licensee of the Back Seat Driver technology. (See PR ¶ 60; Def. Ex. 34).

MIT encourages sponsors to leverage the Media Lab's resources. (See Def. Ex. 33). In particular, sponsors of the Lab are entitled to visit, view and discuss hundreds of working prototypes developed by the Lab, and are given access to a sponsors-only website that consolidates technical notes on research projects. (Id.). MIT further encourages sponsors to use the Lab as a window to investments and start-ups, and as a way to obtain an inside track on potential opportunities. (Id.; see also DF ¶ 59; PR ¶ 59).

Field Trials of Back Seat Driver Prototypes

In April 1989, Davis and Schmandt began conducting field trials on Boston city streets using a prototype of the Back Seat Driver system installed in a car. (See PF ¶ 3; DR ¶ 3; Def. Ex. 5 at 938; Def. Ex. 41 at 156). According to Davis, "although [Schmandt] and I were confident that the Back Seat Driver would work by June of 1989, we needed to continue field trials to ensure that the system was safe, effective, durable and repeatable." (Pl. Ex. 21 at ¶ 8; PF ¶ 43; DR ¶ 43). All in all, at least 50 field trials were conducted prior to the critical date of August 9, 1989. (Def. Ex. 8 at 173). At issue is whether one or more of these field trials was a "public use" of the invention.

During the trials, a driver would react to driving instructions generated at the MIT Media Lab and sent over a cellular communications connection to a cellular telephone in the car. (PF ¶ 30; DR ¶ 30). Only one car, a 1988 Acura Legend, was ever used to conduct the field trials. (Def. Ex. 41 at 156; Pl. Ex. 15). When the car was not in use, it was parked in an MIT garage, which required card access. (Pl. Ex. 8 at 160-61). MIT

retained ownership of the car and the equipment installed in it until after the critical date. (PF ¶ 33; DR ¶ 33).

It is undisputed that only certain components of the Back Seat Driver system were located inside the car, and that the remaining equipment was located at the MIT Media Lab. (PF ¶¶ 27-28; DR ¶¶ 27-28; see also Pl. Ex. 19). Therefore, only a portion of the system could be viewed by those who drove or rode in the car. No components of the system were visible to members of the public who may have viewed the car from the outside. (See PF ¶ 40; DR ¶ 40). In addition, the Back Seat Driver relied on a software system that ran on a computer and was controlled by a source code that was written by Davis. (PF ¶¶ 45-46; DR ¶¶ 45-46). The source code was not shown or otherwise made available to drivers participating in the field trials. (PF ¶ 49; DR ¶ 49). However, none of the claims at issue here relate to the source code.

The record demonstrates that there were different versions of the Back Seat Driver system. (See PF ¶ 5; DR ¶ 5). As the inventors confirmed in an April 30, 1989 quarterly report to NEC, Version 2 was used during the field trials. (Pl. Ex. 7 at 111). Davis and Schmandt reported with respect to that Version that “[t]he Back Seat Driver is working and working well. We have made dozens of successful trips with it. From our experience, we have a good idea of what features should and should not be in the instructions.” (Id. 108). Nevertheless, Version 2 experienced communications problems between the equipment in the car and equipment located in the Media Lab. (Id.; PF ¶¶ 12-13; DR ¶¶ 12-13). Consequently, the next step was “to move the implementation from the work-

station computer to a computer installed in the trunk of the car,” which would remove the dependence on cellular phones, and make the system “more reliable, cheaper, and a much more convincing ‘concept car.’” (Pl. Ex. 7 at 113; see also PF ¶ 14; DR ¶ 14). Ultimately, a new prototype of the Back Seat Driver system was built where the computer was installed in the car instead of using the cellular telephone apparatus to communicate to a computer that remained stationary. (PF ¶ 24; DR ¶ 24; Pl. Ex. 10 at 14). The new prototype, referred to as “Version 3,” was not implemented until after the critical date of August 9, 1989. (See PF ¶¶ 16, 24, 25). As detailed below, however, the record evidence is that all the claims in dispute in this litigation, claims 1, 42 and 45, were included in Version 2 used during the field tests.³

**Incorporation of Claim Limitations
Into the Back Seat Driver Prototype**

Harman contends that the Back Seat Driver system that was used in the 50 field trials embodied the subject matter of the asserted claims of the ‘685 patent.⁴ While MIT purports to object to this conclusion, it has not supported its objection with record evidence. (See DF ¶¶ 10-11, 18-24, 28-31, 35-37; PR ¶¶ 10-11, 18-24, 28-31, 35-37). Consequently, this court concludes that Harman has established by clear and convincing

³ While in responding to Harman’s Statement of Facts MIT repeatedly asserts that Harman has not identified the version of the prototype being referenced (see, e.g., PR ¶¶ 4, 6, 8, 11), this objection seems to be irrelevant. MIT does not contend that the modifications made in Version 3 relate in any way to the claims at issue in this litigation.

⁴ Both of the parties agree that in this case, claim construction is not a necessary prerequisite to a decision on their motions for summary judgment regarding invalidity. (See Def.’s Mem. at 3 n.3; Pl.’s Mem. at 16-17).

evidence that the asserted claims of the patent at issue in this case were reduced to practice by June 1989, and were incorporated in the prototype used during the field trials which took place prior to the critical date.

Claim 1 is the only independent claim of the patent-in-suit. (See Def. Ex. 1 at Col. 29-34).⁵ MIT has admitted that the subject matter recited in claim 1 was “reduced to practice” at least as early as June 1989. (Def. Ex. 3 at Int. #14). Reduced to practice means that the inventor has constructed an embodiment that meets all the limitations of the claimed invention and has determined that the invention works for its intended purpose. See Taskett v. Dentlinger, 344 F.3d 1337, 1340 (Fed. Cir. 2003). In his testi-

⁵ Claim 1 claims: “1. An automobile navigation system which produces spoken instructions to direct a driver of an automobile to a destination in real time comprising:

computing apparatus for running and coordinating system processes.

driver input means functionally connected to said computing apparatus for entering data into said computing apparatus, said data including a desired destination.

a map database functionally connected to said computing apparatus which distinguishes physical and legal connectivity.

position sensing apparatus installed in the automobile and functionally connected to said computing apparatus for providing said computing apparatus data for determining the automobile’s current position,

a location system functionally connected to said computing apparatus for accepting data from said position sensing apparatus, for consulting said map database, and for determining the automobile’s current position relative to the map database,

a route-finder functionally connected to said computing apparatus, for accepting the desired destination from said driver input means and the current position from said location system, for consulting said map database, and for computing a route to the destination,

a discourse generator functionally connected to said computing apparatus for accepting the current position from said location system and the route from said route finder, for consulting said map database, and for composing discourse including instructions and other messages for directing the driver to the destination from the current position.

a speech generator functionally connected to said discourse generator for generating speech from said discourse provided by said discourse generator, and

voice apparatus functionally connected to said speech generator for communicating said speech provided by said speech generator to said driver.

mony on behalf of MIT, Schmandt stated that in June 1989, the Back Seat Driver was working as a prototype system that included each of the limitations of claim 1 of the '685 patent. (Def. Ex. 7 at 24). Thus, Version 2 of the Back Seat Driver prototype used during field trials embodied claim 1.

Claim 42 claims “[t]he automobile navigation system of claim 1 wherein each intersection in a route is classified into one type in a taxonomy of intersection types, and the disclosure generated in relation to each said intersection depends on its type.” (DF ¶ 18).⁶ Claim 45 of the '685 patent claims “[t]he automobile navigation system of claim 1 wherein said discourse generated comprises a long description of an act given substantially before the act is to be performed and a short description given at the time the act is to be performed.” (DF ¶ 34).⁷ In its Supplemental Responses to Interrogatories dated April 2006, MIT asserted that these claims, among others, “were reduced to practice at least as early as June 1989,” which would make them part of the Version 2 prototype used during field trials. (See Def. Ex. 18 at Int. #14). In support of this assertion, MIT stated that “[t]he details of the reduction in practice were fully described in answer to numerous questions to the inventors propounded during the deposition testimony of Dr. James R. Davis, Ph.D. and Christopher M. Schmandt and in response to this Inter-

⁶ None of the claim terms of claim 42 is disputed for claim construction purposes.

⁷ For purposes of the present motion only, Harman has agreed to accept MIT's claim construction of claim 45. Therefore, the claim construction issues do not need to be resolved prior to the resolution of this motion. (See Harman Mem. (Docket No. 154) at 3 n.3).

rogatory, those answers are herein incorporated by reference.” (Id.). The fact that claims 42, 45 and others “were reduced to practice at least as early as June 1989” was confirmed by MIT in further Supplemental Answers to Interrogatories dated May 2, 2006, which added document references in support of its answers. (Pl. Ex. 19 at Int. #14).

The following month, in June 2006, MIT purported to amend its answers again, following the deposition of “MIT under Rule 30(b)(6) of the Federal Rules of Civil Procedure[.]” (Def. Ex. 3 at Int. #14). At that time, MIT asserted that claims 42, 45 and others “were reduced to practice at least as early as August 4, 1989,” the date of Davis’ thesis. (Id.). However, the 30(b)(6) deposition testimony does not explain or justify such a change. Thus, Schmandt testified as a 30(b)(6) witness as follows:

Q. Did the Back Seat Driver, as it existed as a working prototype in field trials in June of 1989, include the subject matter of Claims 42 through 49?

A. We don’t know.

Q. Why not?

A. Because we have no documentation that tells us when those features were added to the system.

(Def. Ex. 7 at 72). This absence of documentation, which was known to MIT when it provided its earlier answers to interrogatories, neither explains why the prior answers to interrogatories were incorrect, nor calls into question the accuracy of MIT’s prior answers.

Harman has submitted other documents which establish that claims 42 and 45 were reduced to practice and embodied in the working prototype by June 1989. For example, claim 42 refers to the classification of each intersection “into one type in a taxonomy of intersection types” and the disclosure of each intersection depending on its type. In June 1989, MIT submitted for publication in the proceedings of the IEEE Vehicle Navigation and Information Systems Conference a paper entitled “The Back Seat Driver: Real Time Spoken Driving Instructions.” (DF ¶ 19). The paper described the strategies employed by the Back Seat Driver to successfully use speech. (Def. Ex. 5 at 938). In the paper, Davis and Schmandt stated that “[t]he [Back Seat Driver] system has been running in prototype form since April 1989. It has been successfully used by drivers who have never driven in Boston.” (DF ¶ 20, PR ¶ 20; Def. Ex. 5 at 938). They also stated in relevant part as follows:

Based on a study of how people naturally give spoken driving instructions, we developed a taxonomy of intersection types (Figure 2). This taxonomy is necessary in order to describe an intersection in the same way that a person would. For example, people talk about a “T” turn differently than a “fork” (or “Y”) in the road. It is important that instructions match people’s perceptions of the world they see.

* * *

In our system, a route is a sequence of street segments leading from the origin to the destination. We consider every connection from one segment to another as an “intersection”, even if there is only one next segment at the intersection. At any moment, the car will be on one of the segments of the route, approaching an intersection (unless an error occurs, which is handled as discussed below). The task of the Back Seat Driver is to say whatever is necessary to get the driver

to go from the current segment, across the intersection, to the next segment of the route.

The items in the taxonomy of intersection types are called **acts**. We use an object oriented programming methodology, so for each act there is a corresponding “expert”. The Back Seat Driver generates speech by consulting these experts. At any moment, there will be exactly one expert in charge of telling the driver what to do. To select this expert, the Back Seat Driver asks each expert in turn to decide whether it applies to the intersection. The experts are consulted in a fixed order, the most specific ones first. The first expert to claim responsibility is selected. The expert then has the responsibility of deciding what (if anything) to say.

(Def. Ex. 5 at 939) (emphasis added). As Harman contends, this paper is further evidence that claim 42 was reduced to practice by June 1989 and embodied in the Back Seat Driver prototype used in field trials in June and July 1989. (Def.’s Mem. at 13-14). For its part, MIT only disputes any “inference” that the field trials were not permissible experimentation and therefore public use, and any “inference” that the taxonomy was not changed as a result of the field trials. (See PR ¶¶ 20-21). Thus, MIT does not actually dispute the fact that the taxonomy claimed in claim 42 was embodied in the prototype used during the field trials.

With respect to claim 45, which relates to the timing of instructions, MIT again disputes various “inferences” but does not dispute the fact that claim 45, as construed by MIT itself, was embodied in the field trials conducted in June and July 1989 (See PR ¶¶ 35-39). Moreover, in the paper which MIT submitted for publication in the proceedings of the IEEE Vehicle Navigation and Information Systems Conference in June 1989, Davis and Schmandt stated in relevant part:

The *narrator* is the subject of this paper. It generates instructions spoken by a speech synthesizer (a Dectalk). The narrator follows the driver's progress, giving each instruction just when needed. If the time between the instructions is long, the program gives the instruction twice, first in a detail, and later in a brief form

(Def. Ex. 5 at 938). This is further evidence that claim 45 was reduced to practice by June 1989, and was part of the prototype used during field trials.

Obligations of Participants in the Field Trials

Among those who participated in the field trials were MIT students, members of Davis' thesis committee, NEC employees, a Bellcore employee and General Motors personnel. (See DF ¶ 7; PR ¶ 7; R&R at 3). It is undisputed that none of the drivers signed a written confidentiality agreement. (DF ¶ 9; PR ¶¶ 8-9). MIT has not been able to identify the drivers with any specificity. Nevertheless, MIT asserts that everyone who took part in the field trials was a trusted friend, colleague or supporter of Davis, Schmandt or the Media Lab, and understood an implied obligation not to disclose the Back Seat Driver research. (See Pl.'s Mem. (Docket No. 159) at 8; PF ¶ 42). However, as Harman points out, the record does not support MIT's assertion of a recognized culture that would have precluded, or at least inhibited, most of the participants in the field tests from disclosing information about the Back Seat Driver program to others. (See generally DR ¶ 42). Rather, the undisputed facts support Harman's contention that MIT took no steps to limit the dissemination of information gathered during the field trials.

Reading the record in the light most favorable to MIT shows that Schmandt may have had to get permission from MIT's Committee on the Use of Humans as Experimen-

tal Subjects to use drivers in the field tests. (Pl. Ex. 18). The school's concern was the safety of the drivers, not the confidentiality of any research. As Schmandt wrote to the Chairman of the Committee:

While testing the Back Seat Driver, the car will never be driven without a research team member along, for several reasons. Most important, of course, is that the whole point of doing road trials is to observe actually using the system. Secondly, any audio or video recording will be done by the observer in the car. Thirdly, the research team member will be required to operate the computer equipment and cellular telephones in the car.

Since the driver is never alone, and is in fact accompanied by experienced local drivers with a thorough map database available, there is no fear of getting lost. We will be chosing [sic] the routes for the road trials, and would of course avoid any unsafe neighborhoods! In fact most of the driving will be done in Cambridge, within a few miles of MIT.

We have no plans to drive during bad weather or unsafe road conditions; besides safety, this would result in non-uniform test data as subjects would be strained by the environmental factors. We may do some night driving, but this would be in the early evening, hardly in the middle of the night. And as for breakdowns, we have just purchased a brand new car so our vehicle is in excellent condition.

Presumably most of your concerns were based on the assumption that the driver would be alone, and I hope I have clarified that. I will ask Jim to submit a copy of the detailed proposal to you, and to verify insurance coverage with Tom Henneberry.

(Id.).

The form provided for the drivers further demonstrates a concern with safety — not confidentiality. Thus, the record includes a “Consent to be Experimental Subject with the Back Seat Driver,” which was seemingly required by the Committee on the Use of

Humans as Experimental Subjects. (Pl. Ex. 17). However, that consent form makes absolutely no reference to either the need for confidentiality or any obligation to keep information confidential. Rather, it relates to safety issues which might arise during driving. (Id.). Furthermore, although the form provides that “at least one experimenter will be in the car” at all times, there is no indication that the “experimenter” was there to insure any type of confidentiality. Rather, the form merely states that “this person will not answer questions while the experiment is in progress, unless [the driver’s] safety requires it.” (Id.). In short, even the most liberal reading of the record shows that while the inventors may have had forms which participants were to complete, the forms did not contain any acknowledgment of confidentiality.

The testimony relied on by MIT to support its claim of “an implied duty to keep the research private” (PF ¶ 42) is equally unpersuasive. Thus, Davis attested in his affidavit in relevant part as follows:

For the driving experiments we conducted with undergraduate students, either Chris or I would ride along in the vehicle to observe the driver’s performance and evaluate the user interface. Under the experiment’s protocol, one of us was always in the car for test drives. This was required by the MIT Committee on the Use of Humans as Experimental Subjects.

....

Although the subjects drove a car equipped with the Back Seat Driver, the drivers were generally not shown how the Back Seat Driver worked. Their exposure to the system was limited to entering a destination and driving the car according to the supplied directions.

(Pl. Ex. 21 at ¶¶ 8-9). Davis makes no mention of any instructions given to the drivers or any expectations on the part of the inventors that the drivers would keep the information they garnered about the Back Seat Driver confidential.⁸

MIT has also cited to the testimony of Philip Rittmueller, an NEC representative who drove in the car on a few occasions. This testimony, when read in its entirety, establishes that while the inventors may have hoped for confidentiality, the participants in the field tests did not feel duty bound to protect any information. As Mr. Rittmueller testified:

- Q. Do you recall having any discussions with MIT concerning the confidentiality of the Back Seat Driver?
- A. Not -- I mean, typically -- typically, shared research is held, I'll say, close to the vest.
- Q. What does "close to the vest" mean?
- A. Well, you don't go out and tell a whole bunch of people or tell people about it. You keep it within the company, and MIT keeps it within MIT.
- Q. Did you have any documentation memorializing that understanding?
- A. Nope.

(Pl. Ex. 22 at 303). Moreover, as Mr. Rittmueller testified further:

⁸ Given the fact that the record contains affidavits in addition to deposition testimony, there is no reason to believe that additional relevant information would be introduced at trial. Moreover, since both parties have moved for summary judgment on the issue of public use, they have admitted that the factual record is complete.

Q. Let's take it in chunks. You agree that you have already testified that you did not have, on behalf of NEC, a confidentiality agreement?

A. I don't recall one, and I don't believe I ever executed one.

Q. With MIT?

A. Correct.

Q. Do you understand -- strike that. Did you have any understanding that the information that you were receiving from MIT was confidential?

Ms. Mottley: Objection, vague.

By the witness:

A. Confidential -- confidential-ish, closely held-ish, that's how we considered it.

By Mr. Edwards:

Q. But not confidential?

Ms. Mottley: Objection.

By the witness:

A. Not as described in things like protective orders.

By Mr. Edwards:

Q. Or as described in things like confidentiality agreements that two parties sign?

A. Correct.

Q. If you had decided to share MIT's information with a third party, do you believe that MIT would have had any recourse against NEC?

A. Any direct recourse?

Q. Yeah.

A. Probably not.

(Id. at 305-306). There are no statements from any of the other participants in the field studies, such as students or friends, which would support MIT's conclusory assertion that there was an implied obligation to keep information confidential. As detailed below, the record evidence relating to the culture of the Media Lab in general, as well as the dissemination of reports and other information regarding the Back Seat Driver system, also are contrary to MIT's assertion.

Distribution of Information Concerning the Back Seat Driver Project

Harman contends that prior to the critical date, MIT made no effort to maintain the confidentiality of the Back Seat Driver system and that it took numerous steps to publicize the project. (See Def.'s Mem. at 8-10). While MIT does not challenge the underlying facts, it does dispute their significance, and denies that any of its policies or actions made the invention accessible to the public or placed it in the public domain. (See generally PR ¶¶ 40-48).

It is undisputed that at the time of the Back Seat Driver project, MIT had a general, written policy entitled "Open Research and Free Interchange of Information" in which MIT affirmed that "the encouragement of research and inquiry into intellectual areas of great promise is one of the most basic obligations to its faculty, to its students, and to society at large" and further affirmed "the profound merits of a policy of open research

and free interchange of information among scholars as essential to that responsibility and to the interests of the nation as a whole.” (DF ¶ 40; PR ¶ 40; Def. Ex. 24 at 1346). The MIT Media Lab also had a general, written policy stating that “the Media Laboratory is an intellectually open environment where ideas are readily exchanged” (DF ¶ 41; PR ¶ 41; Def. Ex. 25 at 1294).⁹ While neither of these policies were directly tied to the Back Seat Driver project, MIT has not cited to anything in the record to indicate that they were not applicable to the project.

Additionally, Davis and Schmandt authored a document, entitled “Synthetic Speech for Real Time Direction-Giving”, which was presented and made available without restriction to attendees at the International Conference on Consumer Electronics held in Rosemont, Illinois in June 1989. (DF ¶¶ 42-44; PR ¶ 42-44). Therein, the authors stated the following:

⁹ The Media Lab policy also recognized that only certain materials sent to sponsors should be kept confidential. As the policy provided:

Note 1. Protectable Laboratory Intellectual Property may be contained in reports, prototypes, demonstrations and other research results made available to sponsors. To preserve patentability, in a minimum number of cases, sponsors may receive materials from the Laboratory marked as “Confidential.” Sponsors retaining such materials agree to hold the materials in confidence, using the same degree of care as applied to their own confidential information, until patent applications are filed by the Laboratory. Sponsors not wishing to receive confidential materials should return all copies immediately to the Laboratory.

(Def. Ex. 25 at 1300). Thus, the mere fact that a sponsor received information does not appear to have imposed on the sponsor a duty to keep it confidential.

The Back Seat Driver is a research prototype of a system to use speech synthesis as a navigational aid for an automobile equipped with localization equipment. We are evaluating the user interface by field trials. As this is work in progress, this paper will primarily give an overview of the system and describe its components. Included will be discussion of the map database, route finding algorithm, repair strategies, and the discourse generator.

(Def. Ex. 6 at 1101). They also described various aspects of the research prototype as follows:

Our vehicle is equipped with a localization unit built by NEC Home Electronics, Ltd., the project sponsor. It is a dead-reckoning position keeping system which uses speed and direction sensors. To compensate for error, it uses map matching on a map database stored on CD ROM

As this is a research prototype, much of the computation is done in a base computer laboratory (on a Symbolics Lisp Machine), rather than a computer on the vehicle. Two cellular telephones link the computer to the car. The on board navigational hardware transmits position and velocity via modem and cellular phone to the base station. The base station computer does all route planning and discourse generation. Speech synthesis is performed in a commercial text-to-speech synthesizer (Dectalk) cabled to the Lisp Machine. Synthesized instructions to the driver are relayed via the second cellular link and a speaker phone in the car. The keypad of the second phone also serves as the driver's control unit for the Back Seat Driver. Through this keypad a driver selects a destination, requests repeats of spoken information, and accesses other services of the Back Seat Driver.

(Id. at 1101-02).

A similar description of the Back Seat Driver prototype, as well as a block diagram of the system, was included in a newspaper article published in Automotive Electronic News on July 17, 1989. (Def. Ex. 29). The features of the prototype were described in

detail, as was the fact that the voice instructions and the data included in the maps were in the process of being refined. (Id.).

MIT also provided information regarding the Back Seat Driver project to its corporate sponsor, NEC. (See DF ¶ 49; PR ¶ 49). According to Schmandt, there were regular quarterly meetings with NEC, and NEC personnel would see everything MIT had, including the software and the system in its current state of operation. (Def. Ex. 40 at 95-96). As detailed above, Philip Rittmueller of NEC rode in the car containing the prototype on approximately two or three occasions. (Def. Ex. 12 at 57-58). NEC did not enter into a confidentiality agreement with MIT, and, as quoted above, Mr. Rittmueller did not believe he was obligated to keep the information confidential, although it may have been in NEC's interest to do so. (See also note 9, supra).

MIT also provided information about the Back Seat Driver research to employees at Bellcore, a corporate sponsor of the Media Lab. (See DF ¶ 53; PR ¶ 53; Def. Ex. 13 at 37). Recipients included Dr. Lynn Streeter, a Bellcore researcher, and Michael Lesk, a Bellcore employee who was also a member of Davis' thesis committee. (See DF ¶¶ 54, 56; PR ¶¶ 54, 56; Pl. Ex. 2 at 5). Generally, reports received from the Media Lab were shared with members of the management team in Bellcore's computer science division. (Def. Ex. 13 at 37). Dr. Streeter testified that these reports were in the "public domain."

(Def. Ex. 13 at 37).¹⁰ There is no evidence that Bellcore had a confidentiality agreement with MIT.

Availability and Defense of Davis' Thesis

The Back Seat Driver project was the subject of Davis' doctoral thesis. (See generally Pl. Ex. 2). Davis signed the thesis on August 4, 1989, and it was turned over to the MIT library for public dissemination on February 27, 1990. (PF ¶ 53; DR ¶ 53; Pl. Ex. 11 at 112-13). Harman contends that Davis' defense of the thesis and the distribution of the thesis to certain individuals rendered the thesis a "printed publication" prior to the critical date. MIT has moved for summary judgment on this claim.

The only electronic copies of Davis' thesis were stored on a password-protected computer at the MIT Media Lab in a room that had keypad access. (PF ¶ 51; DR ¶ 51). Davis and Schmandt were the only individuals who knew the password. (PF ¶ 52; DR ¶ 52). Consequently, Davis and Schmandt were the only individuals with access to the thesis on the computer, and they were able to control its availability to others. (See DR ¶¶ 51-52; Pl. Ex. 11 at 115-16).

Schmandt testified that "[i]t's generally University policy, and M.I.T. is no exception, that drafts of documents such as thesis [sic] are not public. They are not to be distributed publicly." (Pl. Ex. 11 at 117). Except as detailed herein, the record evidence establishes that neither drafts nor copies of Davis' thesis were distributed to anyone other

¹⁰ As detailed infra, Dr. Streeter did believe that (in contrast) Davis' thesis should be kept more confidential. (See Pl. Ex. 26 ¶¶ 6-7).

than members of Davis' thesis committee or colleagues acting in an academic advisory capacity prior to publication of the thesis in the MIT library. (See PF ¶ 64; DR ¶ 64). Thus, it is undisputed that Mr. Rittmueller of NEC, Dr. Streeter and Mr. Lesk each received a copy of the thesis prior to the submission of the patent application. (See DR ¶ 62; see also R&R (Docket No. 168) at 5-6).¹¹ As described above, Mr. Lesk was a member of Davis' thesis committee, and Mr. Rittmueller and Dr. Streeter worked for corporate sponsors of the Media Lab. There is also some evidence that Dr. Streeter sent a copy of the thesis to Karen Lochbaum at Aiken Computation Lab in Cambridge, Massachusetts. (See DR ¶ 62 (citing Docket No. 133, Ex. 4)). Nothing in the record suggests that Ms. Lochbaum had any relationship to MIT.

MIT contends that Mr. Rittmueller did not receive a copy of the thesis until after it became available in MIT's library on February 27, 1990. (PF ¶ 71). Harman contests this assertion, and points to evidence indicating that Mr. Rittmueller received a copy of the completed thesis earlier, along with Davis' and Schmandt's July 31, 1989 Final Report of the Back Seat Driver project. (DR ¶¶ 69-71). The thesis was signed on August 4, 1989, a few days before the critical date of August 9, 1989. Based on this fact, Harman contends that "[e]ven though Rittmueller received a *finished* copy of Davis' thesis, there is no evidence that he did not receive that copy before the critical date[.]"

¹¹ During oral argument on the parties' motions for summary judgment, MIT agreed that the facts supporting its motion regarding Davis' thesis are the same as the facts presented by the parties in connection with Harman's prior motion for summary judgment on unenforceability. Therefore, this court has incorporated facts from the November 7, 2007 R&R where applicable.

(DR ¶ 70). Given the fact that the finished thesis was not signed until just a few days before the critical date, Harman has not established by clear and convincing evidence that Mr. Rittmueller received the thesis prior to the critical date.

The record also is unclear as to whether Dr. Streeter received Davis' thesis prior to the critical date. There is testimony that Dr. Streeter received the thesis either on "the day it was published" or around the time of Davis' thesis defense. (R&R at 6). As described below, there is evidence that Davis defended his thesis after the critical date. Dr. Streeter also believes that if she sent the thesis to Ms. Lochbaum, a Harvard graduate student, it would have been after it was "publicly available." (See Pl. Ex. 26 ¶ 5).

The parties further disagree as to whether Mr. Rittmueller and Dr. Streeter understood that they had any obligation to keep the thesis confidential. (See PF ¶¶ 72, 75-76; DR ¶ 72, 75-76). It is logical that a thesis, as opposed to general reports or information, would be kept more confidential in an academic setting. Dr. Streeter submitted an affidavit stating that she understood at the time she received Davis' thesis "that in the academic environment, research results and theses drafts are sometimes circulated among close groups of colleagues for comment or feedback, but that these results and drafts were not to be published by others without the agreement of the researcher or author." (Pl. Ex. 26 ¶ 7).¹² This is consistent with Schmandt's testimony quoted above.

¹² Contrary to Harman's contention, Dr. Streeter's affidavit is not directly inconsistent with her deposition testimony, which related to reports received about the project as a sponsor of the MIT Medial Lab.

Harman points out that “[d]rafts are not the issue here” and argues that there is evidence that Dr. Streeter and Mr. Rittmueller received copies of the final thesis before it was filed in the MIT library on February 27, 1990. (See DR ¶ 62). What is missing, however, is clear and convincing evidence that the final thesis, signed on August 4, 1989, was disseminated without restriction prior to the critical date of August 9, 1989.

The only other specific evidence of the possible dissemination of the thesis relates to a May 1989 request from a graduate student at the University of Minnesota to Davis for information about the Back Seat Driver research. (R&R at 7; see also PF ¶ 55; DR ¶ 55). After receiving a response from Davis that is not part of the record, the student wrote “I think I can wait a couple of weeks to see your thesis.” (R&R at 7). Davis denies that he ever sent the student a copy of the thesis, and there is no evidence that he did so. (Id.; see also PF ¶ 55; DR ¶ 55).

Harman also contends that Davis’ thesis was “published” prior to the critical date in connection with Davis’ defense of his thesis. Harman relies on a flyer announcing that the defense would take place on May 26, 1989. (R&R at 9; see also PF ¶ 65; DR ¶ 65). MIT argues that Davis did not defend the thesis until the Fall of 1989. (Pl.’s Mem. (Docket No. 159) at 19). In support of its position, MIT points to testimony describing the flyer as a draft, stating that Davis was unprepared to defend his thesis until sometime later in the Summer and stating that the thesis defense did not take place until the late Summer or Fall of 1989. (See PF ¶¶ 63, 66-68 (citing Pl. Exs. 21 & 24)). Harman has not put forth any other evidence placing the thesis defense prior to the critical date.

On November 4, 1991, the Patent and Trademark Office (“PTO”) rejected the claims of MIT’s August 9, 1990 patent application as being anticipated by Davis’ thesis. (R&R at 7). It appears that the patent examiner assumed that the thesis had been publicly available for over a year before the filing of the application due to the submission date on the thesis of August 4, 1989. (R&R at 7). Subsequently, MIT submitted to the PTO a copy of the title page from the MIT library copy of the thesis, which bore the date of February 27, 1990, and explained that this was the date when the thesis had been catalogued and shelved and thereby became available to the public. (R&R at 7-8). The PTO ultimately granted the patent. (R&R at 8). Based on this evidence, MIT has moved for summary judgment on Harman’s claim that the thesis invalidated the patent as it was a printed publication prior to the critical date.

Additional facts relevant to the court’s analysis are described below.

III. ANALYSIS

A. Applicable Standards of Review

1. Summary Judgment and Patents

Summary judgment is appropriate when “the pleadings, depositions, answers to interrogatories, and admissions on file, together with the affidavits, if any, show that there is no genuine issue as to any material fact and that the moving party is entitled to a judgment as a matter of law.” Fed. R. Civ. P. 56(c). The mere existence of *some* alleged factual dispute will not alone withstand an otherwise properly supported motion for

summary judgment; rather, there must be *genuine* issues of material fact in dispute to defeat summary judgment. Anderson v. Liberty Lobby, Inc., 477 U.S. 242, 247-48, 106 S. Ct. 2505, 2510, 91 L. Ed. 2d 202 (1986). Moreover, in evaluating a motion for summary judgment, “[t]he evidence of the nonmovant is to be believed, and all justifiable inferences are to be drawn in his favor.” Id. at 255, 106 S. Ct. at 2513. However, the court will not consider “conclusory allegations, improbable inferences, and unsupported speculation.” Galloza v. Foy, 389 F.3d 26, 28 (1st Cir. 2004) (citation omitted).

“Cross-motions for summary judgment do not alter the basic Rule 56 standard, but rather simply require [the court] to determine whether either of the parties deserves judgment as a matter of law on facts that are not disputed.” Adria Int’l Group, Inc. v. Ferre Dev., Inc., 241 F.3d 103, 107 (1st Cir. 2001). “When facing cross-motions for summary judgment, a court must rule on each motion independently, deciding in each instance whether the moving party has met its burden under Rule 56.” Dan Barclay, Inc. v. Stewart & Stevenson Servs., Inc., 761 F. Supp. 194, 197-98 (D. Mass. 1991).

A patent carries a statutory presumption of validity, and “[e]ach claim of a patent (whether in independent, dependent, or multiple dependent form) shall be presumed valid independently of the validity of other claims” 35 U.S.C. § 282. A party challenging the validity of a patent or any claim thereof “must produce clear and convincing evidence of the patent’s invalidity. It is only when this threshold showing is made that the burden falls on the patentee to come forward with evidence sufficient to raise a dispute of material fact.” Articulate Sys. Inc. v. Apple Computer, Inc., 53 F. Supp. 2d 62, 64 (D.

Mass. 1999). Thus, “the presumption of validity remains intact and the ultimate burden of proving invalidity remains with the challenger throughout the litigation.” Id. at 65 (quoting Mas-Hamilton Group v. LaGard, Inc., 156 F.3d 1206, 1216 (Fed. Cir. 1998)).

2. The Public Use Bar

The parties have cross-moved for summary judgment on the issue of whether the asserted claims of the ‘685 patent are invalid under the public use bar of 35 U.S.C.

§ 102(b). Pursuant to the statute, “[a]n invention ‘in public use’ more than one year prior to the date of the application for a patent in the United States is unpatentable.” Am. Seating Co. v. USSC Group, Inc., 514 F.3d 1262, 1267 (Fed. Cir. 2008) (quoting 35 U.S.C. §102(b)). “Whether a patent is invalid for public use is a question of law based on underlying facts.” Id.

“Public use includes ‘any [public] use of [the claimed] invention by a person other than the inventor who is under no limitation, restriction or obligation of secrecy to the inventor.’” Eli Lilly & Co., 471 F.3d at 1380 (quoting In re Smith, 714 F.2d 1127, 1134 (Fed. Cir. 1983)) (alterations in original). “In considering whether a particular use was ‘public’ within the meaning of section 102(b), [the] court considers the policies underlying the bar.” Id. “The purpose of the public use bar to patentability is to discourage ‘the removal of inventions from the public domain which the public justifiably comes to believe are freely available.’” Am. Seating Co., 514 F.3d at 1267 (quoting Bernhardt, L.L.C. v. Collezione Europa USA, Inc., 386 F.3d 1371, 1379 (Fed. Cir. 2004)). In addition, the bar is designed to “prohibit an extension of the period for exploiting the

invention, and [to favor] prompt and widespread disclosure of inventions.” Trading Techs. Int’l, Inc. v. eSpeed, Inc., 507 F. Supp. 2d 883, 888 (N.D. Ill. 2007).

“The test for whether an invention is ineligible for a patent due to the section 102(b) public use bar ‘is whether the purported use: (1) was accessible to the public; or (2) was commercially exploited.’” Am. Seating Co., 514 F.3d at 1267 (quoting Invitrogen Corp. v. Biocrest Mfg., L.P., 424 F.3d 1374, 1380 (Fed. Cir. 2005)). For the reasons detailed herein, while Harman has not established that the Back Seat Driver was commercially exploited during the field trials, Harman has met its burden of proving by clear and convincing evidence that the Back Seat Driver was accessible to the public with “no limitation, restriction or obligation of secrecy to the inventor.” Therefore, this court recommends that Harman’s motion for summary judgment be allowed.

B. Harman’s Motion for Summary Judgment on Public Use

In order for Harman to succeed on its motion for summary judgment, this court must find that, “taking the facts in the light most favorable to [MIT], no reasonable jury could disagree that [Harman] has established a barring prior public use under § 102(b) by clear and convincing evidence.” Trading Techs. Int’l, 507 F. Supp. 2d at 888. Harman asserts that it is entitled to summary judgment because it is undisputed “that *after* MIT reduced to practice claims 1, 42, and 45 of the patent-in-suit and *before* the critical date, 50 members of the public, including General Motors (“GM”) employees, used the Back Seat Driver for its intended purpose on the public streets of Boston, without any

confidentiality obligation.” (Def.’s Reply Mem. (Docket No. 164) at 1). This court agrees.

1. Reduction to Practice

MIT’s admission that, at a minimum, claim 1 was reduced to practice by June 1989, compels the conclusion that the field trials which took place over the next couple of months without restriction as to confidentiality constituted public use of the claimed invention.¹³ “In order to establish an actual reduction to practice, the inventor must prove that: (1) he constructed an embodiment or performed a process that met all of the limitations of the [claimed invention], and (2) he determined that the invention would work for its intended purpose.” Taskett, 344 F.3d at 1340 (quoting Cooper v. Goldfarb, 154 F.3d 1321, 1327 (Fed. Cir. 1998)).¹⁴ Thus, once an invention is reduced to practice, it is obviously in “use.” The inventor does not need any more time to determine whether the invention will serve its intended purpose. See Seal-Flex, Inc. v. Athletic Track & Court Constr., 98 F.3d 1318, 1324 (Fed. Cir. 1996) (“When an evaluation period is reasonably needed to determine if the invention will serve its intended purpose, the § 102(b) bar does not start to accrue while such determination is being made.”).

¹³ The Patent Office apparently did not have this admission when ruling on the patent. Nor did the Patent Office have information about the lack of confidentiality in connection with the field trials. As described more fully in the R&R, however, the Patent Office did have some information about the existence of the field trials.

¹⁴ As detailed above, the undisputed facts establish that claims 42 and 45 were reduced to practice by June 1989 as well. Significantly, while MIT purports to dispute this fact in response to Harman’s Statement of Facts, it makes no mention of it in its memoranda.

MIT contends that modifications were made to the Back Seat Driver system as a result of the field trials. Absent the reduction to practice of the Back Seat Driver prototype incorporating claims 1, 42 and 45, MIT might have had an argument that this period of refinement constituted “experimentation.” Because “an inventor who seeks to perfect his discovery may conduct extensive testing without losing his right to obtain a patent for his invention — even if such testing occurs in the public eye[,]” proof of experimentation negates the “public use” statutory bar to patentability. EZ Dock v. Schafer Sys., Inc., 276 F.3d 1347, 1352 (Fed. Cir. 2002). However, “once the invention is reduced to practice, there can be no experimental use negation.” Id. at 1357 (Linn, J. concurring). Accord Trading Techs. Int’l, Inc., 507 F. Supp. 2d at 890-91 (“Once an invention has been reduced to practice, further testing will not qualify as experimental use for purposes of negating a bar under § 102(b).”), and cases cited. This is true even if the subsequent uses result in refinements or improvements to the invention. See New Railhead Mfg., L.L.C. v. Vermeer Mfg. Co., 298 F.3d 1290, 1297 (Fed. Cir. 2002), cert. denied, 537 U.S. 1232, 123 S. Ct. 1357, 155 L. Ed. 2d 196 (2003). Similarly, there is no requirement for “an inventor to have created a viable commercial embodiment” before a product can be reduced to practice. Taskett, 344 F.3d at 1342, and cases cited. Therefore, the fact that Davis and Schmandt were refining the Back Seat Driver so that it could be commercially viable before the patent application was filed does not relieve MIT of the consequences of the public use of the Back Seat Driver during the field trials. In short, “[o]nce an inventor realizes that the invention as later claimed indeed works for its intended purpose,

further ‘experimentation’ may constitute a barring public use.” New Railhead Mfg., LLC, 298 F.3d at 1297. That is the situation here.¹⁵

To avoid this conclusion, MIT argues that Invitrogen Corp. v. Biocrest Mfg. L.P., 424 F.3d 1374 (Fed. Cir. 2005), changed the law by holding that “evidence of experimental use may negate either the ‘ready for patenting’ or ‘public use’ prong” of 35 U.S.C. § 102(b). (Pl.’s Reply Mem. (Docket No. 166) at 1 (quoting Invitrogen, 424 F.3d at 1379-80)). However, nothing in Invitrogen suggests that experimental use may continue to defeat the public use bar once the claimed invention has been reduced to practice and is working for its intended purpose. MIT has cited no cases, and this court has found none, in which a court has interpreted Invitrogen as having changed the law to that effect. Rather, post Invitrogen cases continue to hold that reduction to practice “cut[s] off the ability to claim any experimental use.” In re Cygnus Telecomm. Tech., LLC, Patent Litig., 481 F. Supp. 2d 1029, 1052 (N.D. Cal. 2007). See also Trading Techs. Int’l, 507 F. Supp. 2d at 890-91. As detailed more fully below, the “uses” to which the Back Seat Driver were put were public uses under § 102(b).

¹⁵ Since “experimentation” is not available to MIT to negate public use, this court expresses no opinion as to whether the field trials would actually qualify as experimentation under the statute. A determination of experimental use requires consideration of various evidentiary factors, including “the length of the test period, whether the inventor received payment for the testing, any agreement by the user to maintain the use confidential, any records of testing, whether persons other than the inventor performed the testing, the number of tests, and the length of the test period in relation to tests of similar devices.” Baxter Int’l Inc. v. Cobe Labs, Inc., 88 F. 3d 1054, 1060 (Fed. Cir. 1996).

2. Public Use

“While ‘public use’ of an invention has been defined as ‘any use of that invention by a person other than the inventor who is under no limitation, restriction or obligation of secrecy to the inventor,’ courts have considered a wide variety of factors when determining whether the use of an invention was indeed ‘public’ within the meaning of Section 102(b).” Sys. Mgmt. Arts Inc. v. Avesta Techs., Inc., 87 F. Supp. 2d 258, 264 (S.D.N.Y. 2000) (internal quotations and citation omitted). Thus, in assessing public use, fact finders consider “evidence relevant to experimentation, as well as, *inter alia*, the nature of the activity that occurred in public; public access to the use; confidentiality obligations imposed on members of the public who observed the use; and commercial exploitation.” Invitrogen, 424 F.3d at 1380. As detailed below, the lack of restrictions on the dissemination of information gathered during the field trials is fatal to the patent’s validity. Before reaching that issue, however, the court will address MIT’s arguments to the effect that the information gathered by the participants in the field trials was insufficient to qualify as public use of the invention. For the reasons detailed herein, MIT’s arguments are unpersuasive.

Harman points to the fact that the drivers were allowed to use the Back Seat Driver prototype as any user of the device would use it., *i.e.*, as it was intended. See Sys. Mgmt. Arts, 87 F. Supp. 2d at 264 (“It is not necessary for a product to actually be accessible to the public to fall under Section 102(b), but rather that the product has been used in a public fashion.”) (quotations and citation omitted). MIT responds that there were signi-

ficant components of the system that were not visible to the drivers in the car. In so arguing, however, MIT misconstrues the meaning of public use. Thus, “it is not public knowledge of his invention that precludes the inventor from obtaining a patent for it, but a public use or sale of it.” New Railhead Mfg., 298 F.3d at 1299 (quotations and citation omitted) (fact that one could not view a patented drill bit or see it in operation did not preclude finding of public use). “[S]ome inventions are by their very character only capable of being used where they cannot be seen or observed by the public eye.” Minn. Mining & Mfg. Co. v. Appleton Papers, Inc., 35 F. Supp. 2d 1138, 1148 (D. Minn. 1999) (quoting Egbert v. Lippman, 104 U.S. 333, 336, 26 L. Ed. 755 (1881)). Nevertheless, this does not preclude a finding of public use. See id. In short, “there is no requirement that the activities which constitute the . . . ‘public use’ bar[] be enabling, in the sense of disclosing the invention in such detail as to put the public in possession of the invention itself.” Sys. Mgmt. Arts Inc., 87 F. Supp. 2d at 269-70 (quotations and citation omitted) (use of invention in its intended way may constitute public use even if details of invention are not disclosed). As long as an individual other than the inventor uses the invention in its natural and intended way without efforts to conceal its operation, the invention may be in “public use” within the meaning of 35 U.S.C. § 102(b). See Advanceme, 509 F. Supp. 2d at 608, and cases cited.

MIT also argues that since the drivers were not given unfettered use of the Back Seat Driver prototype, there was no public use. The fact that the use of the prototype by the drivers was supervised is clearly a relevant factor in deciding whether or not a use

was a public use under § 102(b). See Articulate Sys., Inc., 53 F. Supp. 2d at 76 (in determining public use, “relinquishment of control by the patentee and the presence or absence of a secrecy agreement appear to carry the most weight”). Nevertheless, it is far from dispositive. In numerous situations, courts have found a public use following a demonstration of an invention where the inventor maintained physical control over the invention but did not restrict dissemination of the information garnered from the demonstration. “As a number of courts have held, the demonstration of an invention without obtaining assurances of confidentiality may well constitute ‘public use’ under Section 102(b).” Sys. Mgmt. Arts Inc., 87 F. Supp. 2d at 268 (citing cases).¹⁶ Thus, the relinquishment of physical control over the invention is not controlling on the issue of public use. See, e.g., Beachcombers v. WildeWood Creative Prods., Inc., 31 F.3d 1154, 1159-60 (Fed. Cir. 1994) (demonstration by inventor of an invention at a party for the purpose of obtaining feedback, without any effort to keep information confidential, constituted public use). Rather, it must be considered in connection with whether the inventor maintained control over the distribution of information about the invention. See Moleculon Research Corp. v. CBS, Inc., 793 F.2d 1261, 1265 (Fed. Cir. 1986) (while inventor allowed others to use his puzzle, no public use where he “retained control over

¹⁶ The issue of control over the invention often arises in determining whether the use of a prototype was experimental. See, e.g., Lough v. Brunswick Corp., 86 F.3d 1113, 1120 (Fed. Cir. 1996).

its use as well as over the distribution of information concerning it”), cert. denied, 479 U.S. 1030, 107 S. Ct. 875, 93 L. Ed. 2d 829 (1987).

MIT’s failure to impose any obligation of confidentiality on the distribution of information about the Back Seat Driver is fatal to its patent. It is undisputed that none of the drivers who participated in the field trials signed a written confidentiality agreement. While “the presence or absence of such an agreement is not determinative of the public use issue[,]” it is certainly a relevant factor. Id. at 1266. Here, the record indicates that the inventors had forms for the trial participants to sign, but nevertheless failed to obtain any written promises to maintain secrecy. This weighs against a finding of confidentiality.

Where, as here, no written confidentiality agreements exist, courts look to the relationships between the parties and other surrounding circumstances to determine if the inventor had a legitimate “expectation of privacy and of confidentiality” which would negate public use. Id. at 1265. See also Invitrogen Corp., 424 F.3d at 1382; Am. Seating Co., 514 F.3d at 1268. In the instant case, there is insufficient evidence to establish that such implied obligations existed.

At most, there is some evidence in the record that Dr. Streeter and Mr. Rittmueller may have believed that some of the information they had concerning the Back Seat Driver project should have been confidential, although even that understanding of confidentiality appears to have been limited to written documentation such as reports or Davis’ thesis. Restrictions imposed on the disclosure of written documentation about the invention are

not equivalent to a duty on the part of users not to disclose information they may have obtained about the operation of the Back Seat Driver prototype. See Baxter Int'l, Inc. v. Cobe Labs, Inc., 88 F.3d 1054, 1059 (Fed. Cir. 1996) (ethical obligation “to refrain from taking credit for the work of others, or publishing the work of others without permission” did not create an obligation to keep information obtained from observing the invention in operation confidential). The only other obligation of confidentiality which can be found in the record could be on the part of Mr. Lesk, a member of Davis’ thesis committee. In his case, an implied obligation of confidentiality possibly could be found based on the nature of his relationship to Davis. See In re Cronyn, 890 F.2d 1158, 1160-61 (Fed. Cir. 1989) (dissemination of thesis to graduate committee members and defense of thesis did not render it accessible to the public).

The record, however, leaves numerous field trials unencumbered by any confidentiality obligation. Neither Davis nor Schmandt seems to have made “any discernible effort to inform the [test drivers] of the requirement of confidentiality, or otherwise indicate to them that they would owe [the inventors] a duty of confidentiality.” See Netscape Commc’n Corp. v. Konrad, 295 F.3d 1315, 1321 (Fed. Cir. 2002) (demonstration of prototype of remote database object system without confidentiality obligations constituted invalidating public use). Harman has established that, to the extent there was a philosophy at MIT, it was not one of secrecy, but of openness and disclosure. See, e.g., Baxter Int’l, Inc., 88 F.3d at 1058-59 (testimony as to existence of anti-secrecy policy supported conclusion that no duty of confidentiality existed). Even the Media Lab’s

policies seem to reflect a reluctance to keep information confidential during the ordinary course of operations at the Lab. See note 9, supra. MIT has not countered this evidence with anything more than a hope that students or other drivers would keep the workings of the Back Seat Driver confidential. Such a hope seems particularly unfounded given the openness with which the inventors themselves discussed their prototype at conferences and in articles. “A single instance of public use can give rise to Section 102(b)’s bar to patentability” Sys. Mgmt. Arts Inc., 87 F. Supp. 2d at 268. See also Egbert, 104 U.S. at 336 (“one well-defined case of [public] use is just as effectual to annul the patent as many”). Harman has met its burden of proving by clear and convincing evidence that MIT’s patent is barred by public use.¹⁷

3. Commercial Exploitation

Harman also contends that at least some of the alleged uses of the Back Seat Driver occurred for commercial purposes. (Def.’s Mem. at 1-2). “[C]ommercial use is considered a public use under § 102(b), even if it was kept secret. And, even ‘a single instance of competitive exploitation of the invention . . . prior to the critical date can raise . . . the . . . ‘in public use’ bar[] to patentability.’” Trading Techs. Int’l, 507 F. Supp. 2d at 889 (quoting Martin v. Norman Indus., Inc., 725 F.2d 990, 993 (5th Cir. 1984))

¹⁷ For MIT to prevail on its cross-motion for summary judgment, the court must find “that taking the facts in the light most favorable to [Harman], a reasonable jury could not find prior public use by clear and convincing evidence” Trading Techs. Int’l, Inc., 507 F. Supp. 2d at 888. For all the reasons that Harman met its burden, MIT has not met its burden of proof. Therefore, this court recommends that MIT’s cross-motion be denied.

(internal quotations and citations omitted; punctuation in original). However, this court finds that no reasonable jury viewing the record in MIT's favor could find clear and convincing evidence of commercial exploitation.

There is no evidence that any of the field trials were performed in connection with the marketing or sale of the invention. Nor is there any evidence that Davis and Schmandt received compensation from any user of the invention, or allowed a third party to use the invention for purposes of commercial exploitation. Under such circumstances, there is no basis for a finding of commercial use. See Invitrogen Corp., 424 F.3d at 1382-83 (no public use where patent holder did not sell its invention or any products made with it, and did not exploit its invention competitively).

Notwithstanding Harman's argument to the contrary, the facts regarding NEC's sponsorship of the Back Seat Driver research and MIT's efforts to encourage Media Lab sponsorship generally do not establish commercial exploitation. (See Def.'s Mem. (Docket No. 154) at 11-12). Harman has presented no evidence linking the participation of NEC (or any other Media Lab sponsor) in the field trials to any commercial transaction. Moreover, these companies' status as corporate sponsors and/or future licensees alone is insufficient to establish that the field trials were performed for commercial purposes. See Elan Corp., PLC v. Andrx Pharms., Inc., 366 F.3d 1336, 1341 (Fed. Cir. 2004) (an offer to license a patent claiming an invention after future research and development is not an offer to sell the invention), and cases cited.

Consequently, Harman has not met its burden of coming forward with clear and convincing evidence of public use based on commercial exploitation. Thus, to the extent that Harman's motion for summary judgment is premised on commercial exploitation, it should be denied.

C. MIT's Cross-Motion for Summary Judgment on Printed Publication

MIT also has moved for summary judgment that the asserted claims of the '685 patent are not invalidated under the "printed publication" bar of 35 U.S.C. § 102(b) by the availability of Davis' thesis or the defense of his thesis. This court finds that when the evidence set forth in the record is viewed in the light most favorable to Harman, a reasonable jury could not find by clear and convincing evidence that Davis' thesis or thesis defense was a printed publication. Accordingly, this court recommends that, if the District Court reaches this issue, MIT's cross-motion for summary judgment regarding the printed publication bar be allowed.

"Under 35 U.S.C. § 102(b), a patent cannot be granted if 'the invention was . . . described in a printed publication in this . . . country . . . more than one year prior to the date of the application for patent in the United States" In re Cronyn, 890 F.2d 1158, 1159 (Fed. Cir. 1989). "The bar is grounded on the principle that once an invention is in the public domain, it is no longer patentable by anyone." SRI Int'l, Inc. v. Internet Sec. Sys., Inc., 511 F.3d 1186, 1194 (Fed. Cir. 2008) (quoting Application of Bayer, 568 F.2d 1357, 1361 (C.C.P.A. 1978)). In the instant case, the '685 patent is invalid if it was described in a printed publication prior to the critical date of August 9, 1989.

“Because there are many ways in which a reference may be disseminated to the interested public, ‘public accessibility’ has been called the *touchstone* in determining whether a reference constitutes a ‘printed publication’ bar under 35 U.S.C. § 102(b).” Id. (quoting In re Hall, 781 F.2d 897, 898-99 (Fed. Cir. 1986)) (emphasis in original).

Whether the reference in question is “publicly accessible” depends “upon a satisfactory showing that such document has been disseminated or otherwise made available to the extent that persons interested and ordinarily skilled in the subject matter or art exercising reasonable diligence, can locate it.” Id. (quoting Bruckelmyer v. Ground Heaters, Inc., 445 F.3d 1374, 1378 (Fed. Cir. 2006)). Factors that may but are not required to be considered in determining whether an item is a “printed publication” include, but are not limited to, “intent to make public, activity in disseminating information, production of a certain number of copies, and production by a method allowing production of a large number of copies[.]” In re Wyer, 655 F.2d 221, 227 (C.C.P.A. 1981). “The decision whether a particular reference is a printed publication must be approached on a case-by-case basis.” SRI Int’l, Inc., 511 F.3d at 1194-95 (quoting In re Cronyn, 890 F.2d at 1161) (additional quotations and citations omitted). Here, even a review of the record in the light most favorable to Harman establishes by clear and convincing evidence that Davis’ thesis was not a printed publication prior to the critical date.

It is undisputed that Davis’ thesis became publicly accessible under 35 U.S.C. § 102(b) by no later than February 27, 1990, when it was made available for public dissemination in the MIT library. See In re Hall, 781 F.2d at 899-90 (thesis catalogued

and available for review in university library publicly accessible under § 102(b)). As detailed above, however, Harman has failed to establish with any reasonable degree of certainty that either Mr. Rittmueller or Dr. Streeter received copies of the thesis before the critical date. Moreover, Harman has failed to establish to any reasonable degree of certainty that these recipients did not believe that they had an obligation to keep the contents of the written document confidential. There is no evidence that either Davis or Schmandt distributed copies of the thesis (although they had the physical ability to do so). Similarly, there is no persuasive evidence that Dr. Streeter or anyone else freely distributed copies prior to the critical date. Under such circumstances, there is insufficient evidence to establish that Davis' thesis was a printed publication under § 102(b). Cordis Corp. v. Boston Scientific Corp., No. Civ. 03-027-SLR, 2005 WL 1331172, at *4 (D. Del. June 3, 2005) (declining to find that monograph given to three companies was publicly accessible in absence of evidence that companies distributed or would have distributed it freely). Compare Garrett Corp. v. United States, 422 F.2d 874, 878 (Ct. Cl. 1970) ("distribution to commercial companies without restriction on use clearly" constitutes publication).

Harman has also failed to establish that Davis' defense of his thesis rendered it a publication before the critical date. As an initial matter, Harman has failed to establish the defense occurred before the critical date. However, even assuming the defense took place prior to August 9, 1989, Harman has not shown that the thesis became publicly accessible at that time. In particular, Harman has presented no evidence indicating that

actual copies of the thesis were distributed or available in connection with the thesis defense, or that the event included slides that remained on display for more than a limited duration. Under such circumstances, Harman cannot prevail on its claim of invalidity. See In re Klopfenstein, 380 F.3d 1345, 1349 n. 4 (Fed. Cir. 2004) (“an entirely oral presentation at a scientific conference that includes neither slides nor copies of the presentation is without question not a ‘printed publication’ for purposes of 35 U.S.C. § 102(b). Furthermore, a presentation that includes a transient display of slides is likewise not necessarily a ‘printed publication.’”).

The case of MIT v. AB Fortia, 774 F.2d 1104 (Fed. Cir. 1985), on which Harman relies, does not support Harman’s position with respect to the thesis defense. In that case, a paper that was presented orally at a conference was determined to be a “printed publication.” Id. at 1108-09. The conference was attended by 50 to 500 persons having ordinary skill in the relevant art, and copies of the paper were distributed “on request, without any restrictions, to as many as six persons, more than one year before the filing date of the [relevant] patents.” Id. “The key to the court’s finding was that actual copies of the presentation were distributed.” In re Klopfenstein, 380 F.3d at 1349 (describing basis for printed publication finding in MIT v. Fortia). In the instant case, no such evidence has been presented, and therefore, there is no basis for a finding of public accessibility in connection with Davis’ thesis defense. For all these reasons, MIT’s motion for summary judgment on the issue of printed publication should be allowed.

IV. CONCLUSION

For all of the reasons detailed above, this court recommends to the District Judge to whom this case is assigned that Harman's motion for summary judgment on invalidity due to public use (Docket No. 153) be ALLOWED and that MIT's cross-motion for summary judgment on the issue of invalidity for public use (Docket No. 159) be DENIED. Additionally, this court recommends that MIT's cross-motion for summary judgment regarding invalidity under the "printed publication" bar of 35 U.S.C. § 102(b) (Docket No. 159) be ALLOWED.¹⁸

/ s / Judith Gail Dein
Judith Gail Dein
United States Magistrate Judge

¹⁸ The parties are hereby advised that under the provisions of Fed. R. Civ. P. 72 any party who objects to these proposed findings and recommendations must file a written objection thereto with the Clerk of this Court within 10 days of the party's receipt of this Report and Recommendation. The written objections must specifically identify the portion of the proposed findings, recommendations or report to which objection is made and the basis for such objections. The parties are further advised that the United States Court of Appeals for this Circuit has repeatedly indicated that failure to comply with this Rule shall preclude further appellate review. See Keating v. Sec'y of Health & Human Servs., 848 F.2d 271, 275 (1st Cir. 1988); United States v. Valencia-Copete, 792 F.2d 4, 6 (1st Cir. 1986); Park Motor Mart, Inc. v. Ford Motor Co., 616 F.2d 603, 604-605 (1st Cir. 1980); United States v. Vega, 678 F.2d 376, 378-79 (1st Cir. 1982); Scott v. Schweiker, 702 F.2d 13, 14 (1st Cir. 1983); see also Thomas v. Arn, 474 U.S. 140, 153-54, 106 S. Ct. 466, 474, 88 L. Ed. 2d 435 (1985). Accord Phinney v. Wentworth Douglas Hosp., 199 F.3d 1, 3-4 (1st Cir. 1999); Henley Drilling Co. v. McGee, 36 F.3d 143, 150-51 (1st Cir. 1994); Santiago v. Canon U.S.A., Inc., 138 F.3d 1, 4 (1st Cir. 1998).